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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,285	11/22/2005	James P. Beck	02-1107-A1	8774

20306 7590 11/29/2007

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EXAMINER	
HOUGHTLING, RICHARD A	

ART UNIT	PAPER NUMBER
1617	

MAIL DATE	DELIVERY MODE
11/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,285	BECK, JAMES P.	
	Examiner	Art Unit	
	Richard A. Houghtling, Ph.D.	4133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17,19,21-24 and 30* is/are pending in the application.

4a) Of the above claim(s) *19 and 21-24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

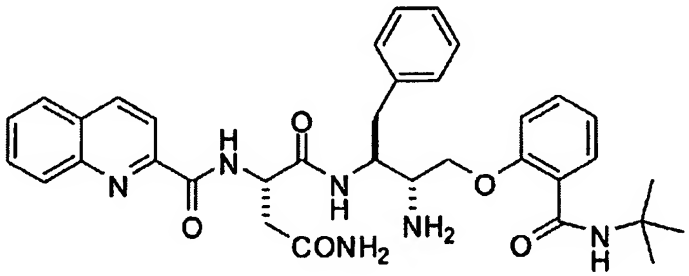
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *21 April 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The Examiner acknowledges receipt of Applicant's response on 10/05/2007 to the restriction requirement. Applicant elected without traverse Group I claims 1-17 and 30 drawn to a method of treating a subject who has, or in preventing a subjected from getting, a disease or condition selected from a group of dementia-related diseases using a compound of Formula I. As per the restriction requirement, Applicant further elected Alzheimer's disease as the dementia-related disease and the following species of Formula I, as shown below for Compound A,



as is found in pending claim 17. This restriction requirement is **MADE FINAL.**

Claims 1-17, 19, 21-24 and 30 are pending. Claims 18, 20 and 25-29 were cancelled in a preliminary amendment filed on April 21, 2005. Claims 1-17 and 30 are presented for examination on the merits as they read upon the elected subject matter. Claims 19 and 21-24 are withdrawn from consideration as being drawn to non-elected subject matter.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-17 and 30 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treatment of Alzheimer's disease, does not reasonably provide enablement for prophylaxis (i.e., prevention) of Alzheimer's disease. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

Applicant's claimed invention is drawn to a method for treating a subject whom has, or in preventing a subject from getting Alzheimer's disease, and who is in need of such treatment which includes the administration of a therapeutically effective amount of a compound of Formula I as indicated above. Thus, the specification does not enable one skilled in the art to use the invention to prevent a subject from getting Alzheimer's disease.

According to Stedman's Concise Medical Dictionary (1987), the term "prophylactic" is defined as 1) preventive, preventing disease or 2) an agent that acts as a preventive against disease (p. 613, col. 2, lines 35-41); while, "preventive" is defined

as 1) prophylactic 2) anything that arrests the threatened onset of disease (p. 607, col.2, lines 53-56). Using the common medical definitions of prophylaxis as preventive, applicants' specification fails to provide enough detailed teachings for an artisan to make and use the invention commensurate within the scope of the claims.

The instant claims are drawn to a method for the prevention of a subject from getting Alzheimer's disease. The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention. Attention is directed to *In re Wands,* 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman,* 230 USPQ 546 (BdAPIs 1986) at 547 the court recited eight factors:

(A) The breadth of the claims;
(B) The nature of the invention;
(C) The state of the prior art;
(D) The level of one of ordinary skill;
(E) The level of predictability in the art;
(F) The amount of direction provided by the inventor;
(G) The existence of working examples; and
(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Nature of the invention: The instant invention pertains to a method for treating a subject whom has, or in preventing a subject from getting Alzheimer's disease and who

is in need of such treatment which includes administration of a therapeutically effective amount of the above compound.

Breadth of the claims: The instant claims embrace preventing a subject from getting Alzheimer's disease by administration of the above illustrated compound.

State of prior art: The state of the art for a method of symptom treatment for Alzheimer's disease is reasonably established in the prior art, however, a method for prevention of a subject from getting Alzheimer's disease, which must be completely, totally, absolutely, or permanently prevented is highly unlikely and therefore undeveloped in the prior art.

Relative skill of those in the art: The relative skill of those in the art is high, typically requiring an advanced professional degree.

Predictability or lack thereof in the art: The skilled artisan would view that the method for treating symptoms of Alzheimer's disease relatively predictable; however, in order to prevent a subject from getting Alzheimer's disease so as to be totally, absolutely, or permanently prevented is highly unpredictable. As such, applicant must demonstrate that the invention is able to prevent all types of Alzheimer's disease, provide detailed instructions as to the biomarkers used to monitor the progression of Alzheimer's disease as well as the techniques used to determine whether beta amyloid

plaques are found in the brain and how these are distinguished from other non-Alzheimer's disease-associated plaques in the brain. At the time of applicant's invention, the predominant measure to confirm a diagnosis of Alzheimer's disease was by post-mortem examination of the brain and immunohistochemistry of brain sections. Thus in order for applicant to enable one skilled in the art to use applicant's invention, the specification would have to detail how applicant was going to assess plaque formation in living subjects, so as to be totally, absolutely and permanently certain that a subject whom does not show signs of Alzheimer's disease never will, following the preventive treatment.

Amount of guidance provided by the inventor and existence of working examples:

In the instant case, no working examples are provided in the specification, as filed, which shows how applicant's invention prevents Alzheimer's disease. Without any working examples, it is unclear to one skilled in the art how the invention is to be used to treat subjects who have Alzheimer's disease. Applicant provides Examples 1-21 which describe how to make the various chemical compounds such as Compound A, illustrated above; however, none of these examples teach how any one of these compounds is to be used. Indeed, applicant discloses that, "The compounds of the invention possess beta-secretase inhibitory activity. The inhibitory activities of the compounds of the invention are readily demonstrated, for example, using one or more of the assays described herein or known in the art," (p. 32, lines 29-31) yet applicant fails to disclose a working example providing any evidentiary support. Therefore, it

would have been unclear to one of ordinary skill in the art at the time of applicant's invention to know what types of results to expect if compound A was administered in any of the assays disclosed in Examples A-F. Note that lack of a working example, is a critical factor to be considered, especially in a case involving an unpredictable and undeveloped art. See MPEP §2164.

Genetech, 108 F.3d at 1366, states, "a patent is not a hunting license. It is not a reward for search, but compensation for its successful conclusion" and "[p]atent protection is granted in return for an enabling disclosure of an invention, not for vague limitations of general ideas that may or may not be workable.

Therefore, in view of the *Wands* factors, e.g., the lack of direction or guidance provided, an absence of working examples, undeveloped and unpredictable prior art as discussed above, to practice the claimed invention herein, a person of ordinary skill in the art would have to engage in *undue experimentation* to first determine if applicant's invention actually functions as claimed and further have to engage in such experimentation with no assurance of success. Therefore, the instantly claimed invention is not considered enabled for prevention of Alzheimer's disease.

3. Claims 1-17 and 30 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for treatment of Alzheimer's disease, does not reasonably provide enablement for treatment of each and every species of dementia listed in the Markush group. The specification does not enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The instant specification teaches a method for treatment of dementia-related diseases that share a common characteristic pathologic finding in the brain—formation of beta-amyloid plaques (p.1, lines 26-28). Patients diagnosed with Alzheimer's disease, Down's syndrome or Hereditary cerebral hemorrhage with amyloidosis of the Dutch-type each suffer from dementia and present similar brain pathologies. Thus, applicant's invention is to treat the dementia related symptom by utilization of a method involving administration of Compound A to a subject in need thereof.

The instant claim is drawn to a method for the treatment of a subject who has one of the dementia-related diseases listed in a Markush group. The instant specification fails to provide information that would allow the skilled artisan to practice the instant invention for each and every dementia-related disease. Attention is directed to *In re Wands,* 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman,* 230 USPQ 546 (BdAPIs 1986) at 547 the court recited eight factors:

(A) The breadth of the claims;
(B) The nature of the invention;
(C) The state of the prior art;
(D) The level of one of ordinary skill;

(E) The level of predictability in the art;

(F) The amount of direction provided by the inventor;

(G) The existence of working examples; and

(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Breadth of the claim: Applicant's claim is drawn to a method for treatment of dementia and specifically, the species of dementia-related diseases listed within the Markush group of claim 5.

Nature of the invention: Applicant's invention is drawn to a method for treating dementia-related diseases by administering a drug (Compound A) which will reduce the amount of A beta peptide (beta amyloid protein) in the brain and therefore reduce the number or chance of forming plaques of aggregated protein.

State of the prior art and predictability: At the time of applicants filing, the prior art was quite variable with respect to dementia-associated diseases such as Parkinson's disease, Lewy body associated dementia or mixed vascular-related dementias. As a whole, treatment modalities were in infantile stages because much was unknown regarding which proteins formed into aggregates, plaques, neuritic plaques and brain regions involved. Furthermore, much of the research focused on utilization of clinicopathological correlation, identification of overlapping symptoms and existence of co-morbidities to determine disease pathobiology. Dementia research in

this regard was subject to much debate and few treatment modalities developed. Because treatment modalities were at an early stage, few teachings of treatments for dementia-associated diseases such as Parkinson's, Lewy bodies, or mixed vascular and degenerative dementias exist and thus undeveloped and hence highly unpredictable.

Level of one of ordinary skill: The level of ordinary skill in the art is high requiring an advanced professional degree.

Guidance provided by inventor and existence of working examples: The specification teaches a method for treatment of Alzheimer's disease, but fails to provide enough detailed insight for the other species of dementia-related diseases as claimed. Because of high unpredictability in the prior art regarding treatment modalities for dementias associated with Parkinson's disease, Lewy body disease or mixed vascular and degenerative disease; applicant is required to provide sufficient detail to convey to one skilled in the art that which is necessary to fill in the gaps found in the undeveloped prior art and further provide assurance that applicants invention results are predictable.

The instant specification fails to provide any working examples which indicate that the treatment method comprising administering compound A to a patient having a dementia-related disease such as those associated with Parkinson's disease, Lewy body disease or mixed vascular and degenerative disease might benefit from the

inhibition of beta-secretase activity and presumably reduced A beta peptide. Since treatment of dementia-related diseases by inhibition of beta-secretase activity is undeveloped in the prior art, Applicant's disclosure needs to fill in that which is uncertain. At the time of applicant's invention, one of ordinary skill in the art who sought to treat Parkinson's disease associated dementia using these methods would have been unable to predict the outcome of such treatment, because Applicant failed to provide any working examples and evidentiary support.

Therefore, in view of the *Wands* factors, e.g., the lack of direction or guidance provided, an absence of working examples, undeveloped and unpredictable prior art as discussed above, to practice the claimed invention herein, a person of ordinary skill in the art would have to engage in *undue experimentation* to first determine if applicant's invention actually functions as claimed and further have to engage in such experimentation with no assurance of success. Therefore, the instantly claimed invention is not considered enabled for treatment of the other species of dementia-related diseases.

4. Claims 1-17 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant's invention is drawn to a method for treatment of Alzheimer's disease by administering a therapeutically effective amount of the compound illustrated above to a subject who is in need thereof.

To provide adequate written description and evidence of possession for a claimed method of treatment, which includes administration of a therapeutically effective amount of a compound to a subject in need thereof, the specification must provide evidentiary support that such a compound possesses an activity consistent with treating the symptom. Applicant states in the specification (p. 32, lines 29-32), that

> "the compounds of the invention possess beta-secretase inhibitory activity. The inhibitory activities of the compounds of the invention are readily demonstrated, for example using one or more of the assays described herein or known in the art."

Applicant broadly discloses several different biological assays (see Examples A-H, p. 57 lines 28-34 to p. 65, lines 1-17) that a skilled artisan would routinely employ to examine the inhibitory potential of a drug for beta-secretase, an enzyme which cleaves amyloid precursor protein into beta-amyloid protein. Aggregates of beta-amyloid protein are found in plaques in brain regions of Alzheimer's disease patients. Thus a potential therapeutic approach would be to develop medicaments to reduce the activity of beta-secretase and therefore reduce the amount of beta-amyloid present in the brain. The biological assays (Examples A-H) disclosed evaluate beta-secretase activity directly or indirectly and do so in a broad manner which could be applied to many drugs.

However, Applicant's specification does not include any of the findings from any of the described assays to provide evidentiary support that Compound A (or any of the other compounds provided in Examples 1-21) inhibits beta-secretase activity. Applicant's specification lacks drawings, data tables, or mere results discussed within the text of the detailed assay methods to support such an effect. Because the specification fails to support Applicant's statement regarding the inhibitory effect of Compound A for beta-secretase, the Examiner has no factual basis from which to evaluate applicant's claimed invention. As a result, applicant was not in possession of the invention at the time of filing.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-2 and 5-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al. (U.S. Patent 5,693,815; as found in applicants' IDS filed on April 21, 2005) and Esiri et al. (1998).

Applicant's claims 1-2 and 5-17 are drawn to a method of treating or preventing Alzheimer's disease, as well as, several other dementia-related diseases comprising administering compound A, as is illustrated above. Listed within the method of claim 5 are many species of dementia-related diseases that may be treated or prevented in a subject comprising administering compound A, which is further limited by several dependent claims 1-2 which limit the dementia related diseases to Alzheimer's disease and the method comprising administering compound A to a subject; and claims 6-17, each of which define structural features of the compounds of Formula I thus resulting in the list of chemical compounds in the Table found in instant claim 17.

Bennett et al. (US Patent 5,693,815) teach chemical compounds and methods for treatment of HIV-infection in a patient. Among many pharmaceutical compounds taught by Bennett et al., Compound A and its R- and S- epimers and racemic mixtures are included, as well as, many additional related compounds (see Table spanning col. 9-14; particularly compounds A and B). Further disclosed and taught by Bennett et al. is t that compounds A or B, which correspond to the R- or S-epimer of the third chiral carbon, respectively, possess anti-HIV activity (col. 31, lines 1-67). HIV1 protease is effectively inhibited by either compound A (IC_{50} = 1.35 μM) or compound B (IC_{50} = 1.5

μM or 0.6 μM) as shown in a Table provided (see col. 32, Table, lines 1-9). Thus Bennett et al. teaches that compounds A or B, which inhibit HIV1 protease are useful in treating AIDS (see col. 32, lines 55-57). Additionally, Bennett et al. discloses the compound synthesis strategies, as well as pharmaceutical compositions and routes for their administration (col. 32, lines 58-67 and col. 33 lines 1-37). Bennett et al., however, does not teach methods for treatment of patients having any dementia-related diseases, including Alzheimer's disease.

Esiri et al. teach that the brains of 20-80% of HIV^+/AIDS patients show evidence of infection that is associated with elevated interleukin-1 and other cytokines (p. 30, col. 1, lines 20-22 and 25-27; p. 32, col. 1, lines 41-59) as well as an increased prevalence of cortical argyrophilic amyloid deposits in plaques which is most notable in post-mortem evaluation of brains from patients aged 30-39 compared to age-matched HIV^- control patients, and also elevated at all decades examined (see Figure 1 on bottom of p. 31). This study is the first to show a relationship between AIDS and argyrophilic plaque deposition (p.31, col. 2, lines 51-53); and further, this elevation of plaque deposition neared that described for Down's syndrome patients (p. 31, col. 2, lines 56-60). However this is not limited to AIDS patients, as 2 out of 10 HIV^+ patients who never progressed to clinical AIDS were also found to have increased argyrophilic plaque deposition (p. 31, col. 2, lines 66-70). Interestingly, Elsiri et al. further teaches that the anti-HIV treatments were ineffective at reducing the risk of plaque formation (p. 31, col. 2, lines 24-26). Esiri et al. does not teach composition A of applicant's elected invention.

The same compounds disclosed by applicant in a method for treating dementia-related diseases, such as Alzheimer's disease are each made and disclosed by Bennett et al. as pharmaceutical compositions and methods for treatment of AIDS, which is referenced and noted in the instant specification (p. 5, lines 1-5; p. 9, lines 1-2; p. 10, lines 1-11). Likewise, applicant's Table found in claim 17 is identical to that found in Bennett et al.; and thus, compound A described in Bennett et al. corresponds to the compound elected by applicant in response to the restriction requirement. Additional compounds presented in applicant's claim 17 are also found in the Table presented by Bennett et al.

The teachings of Bennett et al. demonstrate that compound A is effective in the *in vitro* inhibition of HIV1 protease and thus has potential in the treatment of AIDS. Esiri et al. teaches that AIDS patients have an increased prevalence of argyrophilic plaque deposition of beta amyloid, a histopathological characteristic of Alzheimer's disease, which was unresponsive to anti-HIV treatment. Taking these two teachings together, it would have been *prima facie* obvious to one of ordinary skill in the art at the time of applicant's invention to use routine experimentation to determine if AIDS patients treated with compound A had reduced prevalence of argyrophilic plaques of beta amyloid as described by Elsiri et al. Furthermore, one of ordinary skill in the art at the time of applicant's invention would have been motivated to do so in order to improve its marketability as an effective anti-HIV therapy by promoting its effectiveness as an

inhibitor of HIV1 protease activity and plaque formation; additionally, it would have also been *prima facie* obvious to use compound A for other diseases which are associated with an increased prevalence of argyrophilic plaque formation, such as, Alzheimer's disease or Down's syndrome to further expand the drug's market share.

6. Claims 3-4 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bennett et al. and Esiri et al. as applied to claims 1-2 and 5-17 above, and further in view of Shapiro (U.S. Patent 5,668,117).

Bennett et al. and Esiri et al. are discussed above. Bennett et al. and Esiri et al. do not teach that compound A modulates amyloid beta converting enzyme (claim 3), further comprises, a P-glycoprotein inhibitor (claim 4), or further comprises one or more additional therapeutic agents (claim 30).

Shapiro teaches medicament combinations and pharmaceutical compositions for treatment of neurological diseases—such as, Alzheimer's disease. In Example 2 (spans col. 30 to col. 36 lines 1-63), Shapiro teaches that clinical treatment of Alzheimer's disease comprises administering a carbonyl-trapping agent and at least one of the co-agents listed. Some of the listed co-agents (a-z) are drugs that belong to the following classes: (e) acetylcholinesterase inhibitors (col. 32 lines 21-60), (q) nonsteroidal anti-inflammatory agents (col. 35, lines 35-67 and col. 36, lines 1-20), (v) antioxidant agents (col. 36, lines 31-48), as well as several drugs which also act as P-glycoprotein inhibitors

such as verapamil (col. 32 lines 61 and 64-65) or alpha-tocopherol (col. 36, lines 35-36) each of which is identified by applicant as possible P-glycoprotein inhibitors (see applicant's specification, p. 45, lines 12-13).

Taken together, compound A taught by Bennett et al. inhibits HIV1 protease inhibitor; that may also reduce argyrophilic plaques, known to be prevalent in AIDS patients and unaffected by previous anti-HIV therapies, as taught by Elisir et al.; one of ordinary skill in the art seeking to increase the marketability of compound A and to expand the potential profitability of compound A would have found it *prima facie* obvious to use routine experimentation to determine that compound A also modulated beta amyloid converting enzyme thus reducing beta amyloid levels and therefore could be used to treat patients affected by diseases that are also affiliated with increased argyrophilic plaque deposits of beta amyloid protein—such as Alzheimer's disease and Down's syndrome.

Conclusion

In conclusion, no claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard A. Houghtling, Ph.D. whose telephone number is 571-272-9334. The examiner can normally be reached Monday to Thursday from 8:00 am - 5:00 pm. The examiner can also be reached on alternate Fridays (9 am – Noon).

The Group 1600 fax phone number where this application or proceeding is assigned is 571-273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Tech Center representative whose telephone number is (571)-272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, please contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreeni Padmanabhan, can be reached on 571-272-0629.

Richard A. Houghtling, Ph.D.

SREENI PADMANABHAN
SUPERVISORY PATENT EXAMINER